

Work Order ID 155131

155131

Page 1

Monday, January 09, 2017 11:27:52 AM

Item ID: D350-604-041 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: URF 16-567 Stop ***NS2***
 Item Name: Rear Locker Extender
 Start Date: 3/31/2017 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 5/1/2017 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: **DAS 21 9-89** Date: **JAN 12 2017** Tooling: Date: Run Start ***NR1***
 QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr								
D2273	LUR M	1704/12							
D350-604-041	CUR	1704/13	DAS 6 9-89	MAY 08 2017					

100 Document Control 0.00
100
 DC Memo 0.00
 Doc.Control -USB or Paperwork Photocopy bluefile and create labels per PPP D350-604-041
CHG009 CHG010 DAS 21 9-89 **see attachement**
DAS 27 9-89
MAY 16 2017

110 PURCHASING 0.00
110
 Purchasing Memo 0.00
 Purchasing Issue P/O: **34972**
 Description: D350-604-041 Rear locker extender.
 Manufacture as per dwg D2273
 Supplier: FDC Composites Inc.
 Certification of Conformity and process sheet required.

EXTREME CARE MUST BE TAKEN TO PROTECT THE SURFACES OF THE REAR LOCKER. THE SURFACES MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS.

MUST BE WELL PACKAGE, IF NOT IT WILL BE REFUSE

DAS 13 9-89
JAN 17 2017

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation		Disposition			
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : _____			

Work Order ID 155131***155131***

Page 2

Monday, January 09, 2017 11:27:52 AM

Item ID: D350-604-041

Accept

N900040100

Setup Start

NS1

Revision ID: URF 16-567

Stop

NS2

Item Name: Rear Locker Extender

Start Date: 3/31/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 5/1/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

120

Receive & Inspect for Damage & Mat'l Certs
Packaging

0.00

120

Packaging

Memo

0.00

Packaging

Ensure a copy of Certification of Conformity and process sheet from Carbon-by-Design is attached.

DO NOT STACK REAR LOCKERS OR ANYTHING ON THEM

1X SP17-5-4

130

QC6- Inspect dimensions to drawing

0.00

130

QC

Memo

0.00

Quality Control

Check hole locations to template. DT 8824 Check process sheet and audit.

① 17-05-05

DAS
9-89

140

0.00

140

Small Fab

Memo

0.05

Small Fab

1- INSTALL DECALS AS PER DWG

DAS
28
9-89
MAY 16 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			Completed By
					Lead hand / Supervisor Approval Verification
					QC / QA Coordinator Approval
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Work Order ID 155131

Monday, January 09, 2017 11:27:52 AM

155131

Page 4

Item ID: D350-604-041

Accept

N900040100

Setup Start

NS1

Revision ID: URF 16-567

Stop

NS2

Item Name: Rear Locker Extender

Start Date: 3/31/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 5/1/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

0.00

160

Packaging

Packaging

Memo

0.00

Identify and pack for shipping as per PPP D350-604-041

Location: _____

PPP Rev: _____

*fg 106*DAS
28
9-89DAS
27
9-89

MAY 16 2017

170

0.00

170

QC

QC21- Final Inspection - Work Order Release

Memo

0.02

Quality Control

*17/5/17*DAS
21
9-89

MAY 16 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		

Root Cause				FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER :							
Misidentified	☐	Past Due	☐								

Monday, January 09, 2017 11:27:56 AM

155131

D350-604-041

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D350-604-041P		Purchased	No			110	Each	0.0000	1	1			
D350-604-041P									**				
Rear Locker Extender													
D2268		Manufactured	No			140	Each	13.0000	1	1			
D2268									**				
Placard													
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST006		13							
				147069		7		6/13/2017		/			
				148553		6		7/22/2017					
D2728-1		Manufactured	Yes			140	Each	-1.0000	1	1			
D2728-1									**				
Dart Logo Label Small													
D2269		Manufactured	No			155	Each	8.0000	1	1			
D2269									**				
Placard													
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST006		8							
				147070		2		6/13/2017		15783			
				148588		6		7/22/2017					

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

Monday, January 09, 2017 11:27:56 AM

Work Order ID: 155131

155131

Parent Item: D350-604-041

D350-604-041

Parent Item Name: Rear Locker Extender

Start Date: 3/31/2017

Required Date: 5/1/2017

Start Qty: 1.00

Required Qty: 1.00

D5062-041

Manufactured No

155

Each

16.0000

1

1

D5062-041

Bracket Assembly

**

MAY 08 2017

DAS 23

Location

Loc Qty

Loc Code

ST147

16

145920

16

DAS 27

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

TABLE 1

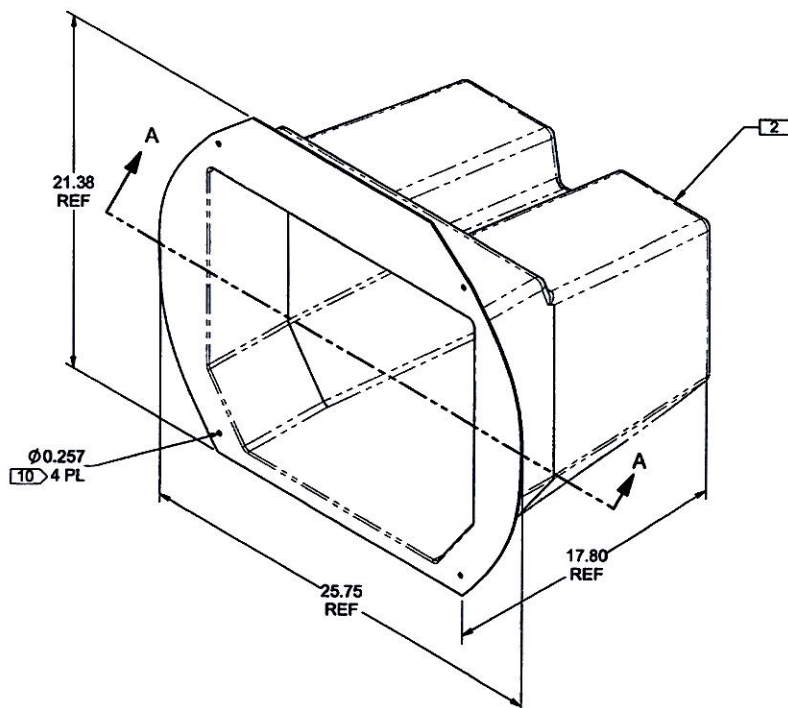
POSITION	MATERIALS
1	TOOL SURFACE
2	GELCOAT
3	3/4 oz CHOPPED STRAND MAT
4	7725 FIBER GLASS
5	7725 FIBER GLASS
9	7725 FIBER GLASS
10	PRIMER

TABLE 2

POSITION	MATERIALS
1	TOOL SURFACE
2	GELCOAT
3	3/4 oz CHOPPED STRAND MAT
4	7725 FIBER GLASS
5	7725 FIBER GLASS
6	7725 FIBER GLASS
7	7725 FIBER GLASS
8	7725 FIBER GLASS
9	7725 FIBER GLASS
10	PRIMER

NOTES:

- 1) MATERIAL: SEE TABLE 3
 2) FINISH: SEE TABLES 1, 2, & 3
 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
 7) WEIGHT: 5.5-7.5 lbs
 8) LAMINATE PER DART QSI 006. LAMINATION SCHEDULE PER THIS DRAWING
 9) LAYUP USING DT9871 MOLD. WET LAYUP WITH BAG/VACUUM
 10) TRIM & DRILL PER DT9905. OPEN HOLES TO Ø0.257
 11) CONSTRUCTION: SEE TABLES 1 & 2
 12) MATTE TO HOLD DOWN CORNERS AS REQUIRED



D2273 REAR LOCKER EXTENDER

TABLE 3

MATERIAL USED	DESCRIPTION
GELCOAT	55X3535 WHITE GELCOAT
FIBER GLASS MAT	OWENS CORNING 3/4 oz CHOPPED STRAND MAT
FIBER GLASS CLOTH	HEXCEL 7725 FIBER GLASS
RESIN SYSTEM	DION 7704
PRIMER	TEMPO 4500-PB-23G (GREEN)

SHOP COPY
 RETURN TO
 ENGINEERING
 UNCONTROLLED COPY
 SUBJECT TO AMENDMENT
 WITHOUT NOTICE
 WORK ORDER
 NO. 155131 MLJ
 17-01-12

SEE TABLE 1

SEE TABLE 2

SECTION A-A

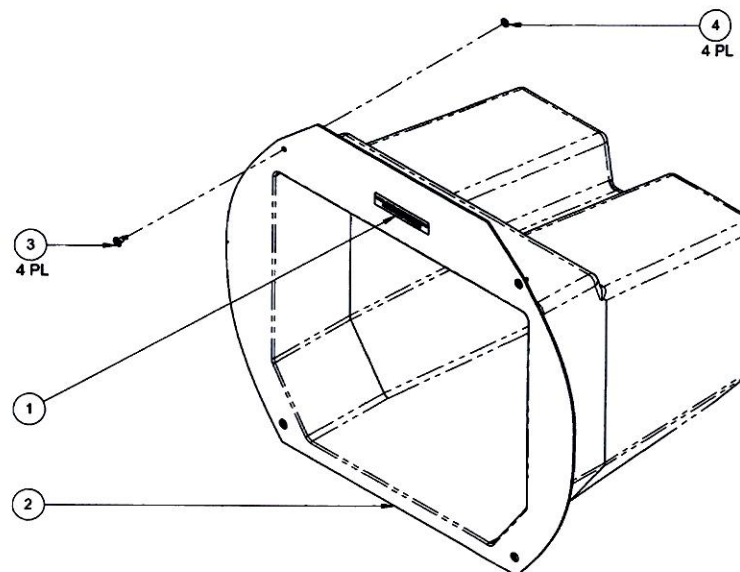
M	CHANGE GELCOAT TO 55X3535 WHITE GELCOAT, REMOVE PAINT FINISH OPTION (NOTE 2)	DB	16.05.19
L	ADD PAINT OPTION (NCR 15-5408)	CP	15.10.19
K	LAYUP AND MATL PER FDC COMPOSITES PROCESS	CP	15.03.12
J	CHANGED GELCOAT TO 4314-001 DURA FR WHITE	ML	13.12.10
I	CHANGE GELCOAT TO POLYCOR 2330PAWK745	SFM	13.08.13
H	CHANGE MATERIAL & MANUFACTURING PROCESS	DC	13.03.15
G	ADD MANUFACTURING OPTION B, ZN B5-1	DC	12.08.08
F	PRIMER LE 3404-S/LE 1175-S WAS 1144-S, ZN A6-1	DC	12.02.27
E	CHANGED SURFACE FINISH FROM 944W005 GELCOAT TO 2330PAWK745 GELCOAT, ZN A7-1. UPDATED DWG TO CURRENT STANDARDS.	DC	12.02.02
D	REMOVE EPOCAST, ADD SURFACE FINISH	CP	02.04.01
C	CLARIFY MATERIAL, LAYUP, AND TOOLING	RF	02.01.30
B	RE-DRAWN	MM	96.05.27
REV.	DESCRIPTION	BY	DATE

DESIGN	JB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	DB		
CHECKED	ML	DRAWING NO.	REV. M
MFG. APPR.	DD	D2273	SHEET 1 OF 1
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	350 REAR LOCKER EXTENDER	NTS
DATE	16.05.19	COPYRIGHT © 1998 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

RELEASED
 2017-01-11
 ECU 17-501

APPROVED

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
	X	D350-604-041	REAR LOCKER EXTENDER ASSEMBLY
1	1	D2268	PLACARD
2	1	D2273	REAR LOCKER EXTENDER
3	4	2600-6	CAMLOCK STUD
4	4	2600-LW	RETAINING WASHER



D350-604-041 REAR LOCKER EXTENDER ASSEMBLY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 5.5 to 7.5 lbs
- 8) INSTALL D2268 PLACARD IN LOCATION SHOWN, CENTERED ON FLANGE

C	REMOVE D2728-1, D2729-1 DECALS (ZN C5-1) REVISED RELATED NOTES, UPDATED PART WEIGHT	ML	13.12.16
B	INCORPORATE DSI 9470 (ZN D7-1), UPDATE DWG TO CURRENT STANDARDS, ADD D2728-1 PLACARD AND ORIENTATION NOTE (ZN C3-1), ADD D2729-1 (ZN C5-1)	DC	12.02.07
A	NEW ISSUE	CP	02.04.01
REV.	DESCRIPTION	BY	DATE
DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	ML		
CHECKED	AP	DRAWING NO.	REV. C
MFG. APPR.	JLM	D350-604-041	SHEET 1 OF 1
APPROVED	MP	TITLE	SCALE
DE APPR.	DS	RLE ASSY	NTS
DATE	14.01.02	COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO34972

Purchase Order Date 1/17/2017

PO Print Date 1/31/2017

Page Number 2 of 3

Order From : VC-FDC01
FDC COMPOSITES INC.
45 CHEMIN DE L'AEROPORT
LOCAL 26
ST-JEAN-SUR-RICHELIEU, QUEBEC J3B 7B5

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 450-357-1344 ext303
Ship To Contact
Ship To Phone
Ship Via: Journey Freight collect
Ship Acct:

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB Destination-Collect

3	D350-604-041P	Rear Locker Extender	5/1/2017	1.00	\$705.00	\$705.00
			Yes	Each		
			5/1/2017			

AS PER DWG D2273 REV. M / D350-604-041 REV. C
B155130
PLEASE NOTE REARLOCKER UNDER NEW REV. M

Line Total: \$705.00

4	D350-604-041P	Rear Locker Extender ✓	5/1/2017	1.00	\$705.00	\$705.00
			Yes	Each		
			5/1/2017			

AS PER DWG D2273 REV. M / D350-604-041 REV. C
B155131
PLEASE NOTE REARLOCKER UNDER NEW REV. M

SP17-5-4

Line Total: \$705.00

5	D350-604-041P	Rear Locker Extender	5/1/2017	1.00	\$705.00	\$705.00
			Yes	Each		
			5/1/2017			

AS PER DWG D2273 REV. M / D350-604-041 REV. C
B155132
PLEASE NOTE REARLOCKER UNDER NEW REV. M

PO Instructions: NOTE: NO BILLING PRIOR TO SHIPPING,

Note:

1/31/2017

FDC Composites inc.
45, Chemin de L'Aéroport
Local 26
Saint-Jean-sur-Richelieu (QC)
J3B 7B5
Tel. : 450 357-1344

Shipping Order

01/05/2017

Order : 2623
Reference : PO 34972/1-5

Customer: Dart

DART AEROSPACE
1270 Aberdeen Street
Hawksbury, ON
K6A 1K7

Ship To
DART AEROSPACE LTD.
1270 Aberdeen Street
Hawksbury, ON
K6A 1K7
Tel.: 1 613 632-9577

Item No.	Description	Qty	Qty. Delivere	B/O Qty
D350-604-041P	REAR LOCKER EXTENDER PO item: 34972/1 FDC ID : DAE001-107 LOT : 2017-02-21 As per DWG.D2273 Rev. M B155127	1	_____	_____
D350-604-041P	REAR LOCKER EXTENDER PO item: 34972/2 FDC ID : DAE001-109 LOT : 2017-02-21 As per DWG.D2273 Rev. M B155129	1	_____	_____
D350-604-041P	REAR LOCKER EXTENDER PO item: 34972/3 FDC ID : DAE001-114 LOT : 2017-02-23 As per DWG.D2273 Rev. M B155130	1	_____	_____
D350-604-041P	REAR LOCKER EXTENDER PO item: 34972/4 FDC ID : DAE001-124 LOT : 2017-03-01 As per DWG.D2273 Rev. M B155131	1	_____	_____
D350-604-041P	REAR LOCKER EXTENDER PO item: 34972/5 FDC ID : DAE001-133 LOT : 2017-03-07 As per DWG.D2273 Rev. M B155132	1	_____	_____

DAS
9
9-89

SPH-5-4

Shipping : _____
Package No : _____
Merchandise Received: _____

Ref. : _____

CERTIFICATE of CONFORMITY

Customer Name: Dart Aerospace.

Customer P/O Number: 34972

Rev. NC

<u>PO Item</u>	<u>Qty</u>	<u>Part number</u>	<u>Dwg number</u>	<u>Description</u>	<u>Dart ID</u>	<u>FDC ID</u>	<u>Lot</u>
1	1	D350-604-041P	D2273 Rev M	350 Rear Locker Extender	B155127	DAE001-107	2017-02-21
2	1	D350-604-041P	D2273 Rev M	350 Rear Locker Extender	B155129	DAE001-109	2017-02-21
3	1	D350-604-041P	D2273 Rev M	350 Rear Locker Extender	B155130	DAE001-114	2017-02-23
4	1	D350-604-041P	D2273 Rev M	350 Rear Locker Extender	B155131	DAE001-124	2017-03-01
5	1	D350-604-041P	D2273 Rev M	350 Rear Locker Extender	B155132	DAE001-133	2017-03-07

I hereby certify that the workmanship, material and the processes used in the manufacture of the above part(s) supplied are in accordance with the requirements of the applicable Purchase Order.

Signature: Marjorie G.
Marjorie Geoffrion, Quality Inspector

Date: 2017-05-01



# LOT	2017-01-14
# SÉRIE(ID)	DAE001-124

JD: B155131

Nom de Gamme :	Rear locker extender – DART
# de Gamme (et rev.) :	DAE001 Rev. E
Nom pièce – Client :	350 Rear locker extender – DART AEROSPACE
# de Dessins (et rev.) :	D2273 Rev. M

Fiche suiveuse

[10-50]	PRÉPARATION	Moule, Espace de travail, Matières premières, Consommables	#23 28 FEV. 2017
[60-80]	FINITION	Appliquer Gelcoat, Inspecter	#3 01 MAR. 2017
[90-140]	MOULAGE	Laminer, Démouler, Inspecter	#21 01 MAR. 2017
[150-190]	USINAGE	Percer, Découper, Ébavurer, Inspecter, Sabler	#30 9 MAR. 2017
[200-230]	FINITION	Primer, Inspection	#3 28 MAR. 2017
240	EXPÉDITION	Emballer, Expédier	#8 1 MAI 2017

Gamme préparée par :	Guillaume G. Jasmin
Gamme vérifiée par :	Francis Lavigne-Larente
Gamme approuvée par :	Maxime Gagné
Date d'émission :	2015-01-14

Gamme révisé préparée par :	Pascal Séguin
Gamme révisé vérifiée par :	Karim Malihi
Gamme révisé approuvée par :	Michel Morin
Date de révision :	2017-02-22

Informations à remplir :
Cases grises pâles

Inspection :

Approbation Qualité
Avant de produire le CofC, toutes les étapes et les
informations requises des gammes subséquentes reliées à
ce produit ont été complétées et remplies



#8

Matières premières

Résine	1028612	2017-05-17	Dion 7704
Norox (Résine)	41049	2017-08-01	MEKP-9
Norox (Gelcoat)	41049	2017-08-01	MEKP-9
Gelcoat blanc	702284	2017-03-20	55X-3535
Mat ¾ oz/pi²	150511001744	N/A	¾ oz Chopped Strand Mat (Owens Corning Or Equivalent)
Fibre de verre 7725	4294874	N/A	Hexcel 7725 Fiber Glass
Apprêt (Primer) (Vert)	18584	2018-12-31	Tempo 4500-PB-23G (Vert)
Durcisseur pour apprêt (hardener)	18317	2018-05-01	Tempo 4500-C-23
Attache mécanique (Camloc)	508980	N/A	2600-5
Rondelle de retenue pour Camloc	1674905	N/A	2600-LW

Moule : MOU306 ou MOU309	FMS	Sarrau
Pompe à vide	55NC	Lunettes de sécurité
Jig de découpe et perçage CNC 5 axes	Peel ply	Soulier de protection
Jig de finition et d'inspection : GAB355	Film perforé	Gants
	Bleeder breather	Masques à cartouches
Pince pour installer Camloc : OUT951	Bag big blue	
Outil pour installer rondelle de retenue : OUT952	Ruban scellant (Dum Dum)	

Annexe 1
Formulaire de résine (RES-DAE001)

MPS-300-93-31-007-NC	Démoulage 55NC
MPS-300-93-31-058-A	Composite part inspection
MPS-300-93-31-020-B	Edge finish after trimming
MPS-300-93-31-097-NC	Epoxy - Polyamide primer
MPS-300-93-31-084-NC	Protection et entreposage des pièces

Suivi des révisions

A	Révision d'une OP inspection, Ajout nouveaux moules et retrait d'un type de primer	2015-03-04	Guillaume G.Jasmin
B	Ajout des conformateurs, du gabarit GAB355, de l'installation des camlocs, inspection du poids et identification finale	2015-03-25	Guillaume G.Jasmin
C	Mise à jour de la case approbation qualité page 1	2015-04-02	Guillaume G.Jasmin
E	Changement de gelcoat, modification du format de la gamme, révision complète de la gamme	2017-02-22	Pascal Séguin

PRÉPARATION

10	<u>Remplir les informations requises sur la première page (cases gris pâle)</u> • Demander au coordonnateur de production (ID) • Inscrire les heures et les dates d'entrée et de sortie de département	#21 28 FEB 2017 1	#23 28 FEB 2017	E: R:
20	<u>Découper la fibre et les périssables (Peel ply, sac étanche...) selon l'ANNEXE 1</u> • ACHEMINER et REMPLIR la section « Matière premières » pour : - Fibre de verre 7725 - Mat ¾ oz	#21 Annexe 1 28 FEB 2017	#23 28 FEB 2017	E: R:
30	<u>Préparer la résine selon RES-DAE001 (Gamme de formulation de résine)</u> ACHEMINER et REMPLIR la section « Matière premières » pour : - Résine - Norox	RES-DAE001	#28 01 MAR 2017	E: R:
40	<u>Préparer le moule</u> - Cochez le moule utilisé : MOU306 ☒ / MOU309 ☐ ☐ Nettoyer et traiter le moule ☒ Poser le Masking tape <u>Si nécessaire, traiter le moule au 55NC</u> • Faire le test de pelage, s'il ne passe pas, appliquer une couche de 55NC et refaire le test.	Annexe 1 MOU306 ou MOU309 MPS-300-93-31-007	#23 01 MAR 2017	E: R:

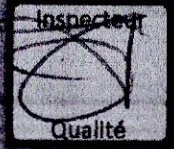
50	<u>Préparer l'espace de travail (pendant l'application du gelcoat)</u>			#21 1 MAR. 2017 #23 01 MAR. 2017	E: R:	
	☒ Vérifier et préparer la pompe ☒ Préparer et distribuer les outils ☒ Protéger l'environnement de travail (tables, plancher, etc.) ☒ Vêtir l'équipement de protection personnel ☒ Partir la ventilation ☒ Vérifier l'ordre et la présence de tous les plis de fibre et des morceaux de noyau dans le sac					
	Position	Matériel				Initial employé
	10F	¾ oz Chopped strand MAT				<i>Keoni</i> <i>NT</i>
	20F	7725 Fibre de verre				<i>Keoni</i> <i>NT</i>
	30F	7725 Fibre de verre				<i>Keoni</i> <i>NT</i>
	40R	7725 Fibre de verre				<i>Keoni</i> <i>NT</i>
	50R	7725 Fibre de verre				<i>Keoni</i> <i>NT</i>
	60R	7725 Fibre de verre				<i>Keoni</i> <i>NT</i>
	70F	7725 Fibre de verre				<i>Keoni</i> <i>NT</i>

FINITION

60	<u>ACHEMINER et REMPLIR la section « Matière premières » pour :</u>		01 MAR. 2017 #3 01 MAR. 2017	E: R:
	- Gelcoat blanc 55X-3535 - Norox MEKP-9			
70	<u>Appliquer le Gelcoat (18 - 22 mils)</u>		Annexe 1 Gauge d'épaisseur	E: R:
	Heure d'application	10 h 40 min		
80	<u>Vérification de l'épaisseur du gelcoat lorsqu'encore humide</u>		1070301	E: R:

MOULAGE

90	Points d'inspection (Inspecteur Qualité ou Chef d'Équipe) : ✓ Qualité de l'application du gelcoat : Uniforme et esthétique. ✓ Donner l'approbation pour que la pièce puisse être laminée (le gelcoat est « amoureux » ou « tack free »)																																	
100	LAMINER <table border="1"> <thead> <tr> <th>Position</th> <th>Matériel</th> </tr> </thead> <tbody> <tr> <td>10F</td> <td>¾ oz Chopped strand MAT</td> </tr> <tr> <td>20F</td> <td>7725 Fibre de verre</td> </tr> <tr> <td>30F</td> <td>7725 Fibre de verre</td> </tr> <tr> <td>40R</td> <td>7725 Fibre de verre</td> </tr> <tr> <td>50R</td> <td>7725 Fibre de verre</td> </tr> <tr> <td>60R</td> <td>7725 Fibre de verre</td> </tr> <tr> <td>70F</td> <td>7725 Fibre de verre</td> </tr> </tbody> </table> CONSOMMABLE <table border="1"> <tbody> <tr> <td>10F</td> <td>Peel Ply</td> </tr> <tr> <td>20F</td> <td>Release film non perforé</td> </tr> <tr> <td>30F</td> <td>Bleeder / Breather</td> </tr> <tr> <td>50F</td> <td>Bagging bleu</td> </tr> </tbody> </table> ☐ S'assurer que tous les plis dans le tableau ont été laminés ☐ S'assurer que tous les conformateurs (Qte 9) sont en place par-dessus le Bleeder/Breather <table border="1"> <tbody> <tr> <td>Heure début laminage</td> <td>11 h 00 min</td> </tr> <tr> <td>Heure mise sous-vide (sac scellé)</td> <td>12 h 00 min</td> </tr> <tr> <td>Intensité du vide (25 inHg)</td> <td>29</td> </tr> </tbody> </table>	Position	Matériel	10F	¾ oz Chopped strand MAT	20F	7725 Fibre de verre	30F	7725 Fibre de verre	40R	7725 Fibre de verre	50R	7725 Fibre de verre	60R	7725 Fibre de verre	70F	7725 Fibre de verre	10F	Peel Ply	20F	Release film non perforé	30F	Bleeder / Breather	50F	Bagging bleu	Heure début laminage	11 h 00 min	Heure mise sous-vide (sac scellé)	12 h 00 min	Intensité du vide (25 inHg)	29	Annexe 1 GAB356 à GAB364 (Qte 9)	#26 01 MAR 2017 #19 01 MAR 2017 #21 E: 1 MAR 2017 R: #23 01 MAR 2017	
Position	Matériel																																	
10F	¾ oz Chopped strand MAT																																	
20F	7725 Fibre de verre																																	
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Heure mise sous-vide (sac scellé)	12 h 00 min																																	
Intensité du vide (25 inHg)	29																																	
110	#26 #23 LAISSER POLYMÉRISER la pièce sous vide pendant 2h 01 MAR. 2017 01 MAR. 2017		#21 N/A 01 MAR. 2017	E: #19 R: 01 MAR. 2017																														
120	DÉMOULER et IDENTIFIER la pièce ✓ Brancher le système d'air comprimé ✓ Ecrire le numéro de pièce et la date sur un collant – # de lot (date de début) – # de série ID - Ex : (AAAAMMJJ) – (DAE001-XXX) ✓ Placer la pièce sur la table d'inspection	Annexe 1	#26 01 MAR. 2017 #19 01 MAR. 2017	E: R:																														

130	Point d'inspection (inspecteur qualité) : ☒ Identifier la présence de surplus de résine ☒ Identifier la présence de bulles d'air ☒ Identifier la présence de zone sèche ☒ Identifier la présence de fil dans la fibre	MPS-300-93-31-058	 20170302	
140	Nettoyer le moule - Enlever la résine durcie tout le tour du moule avec une spatule en plastique pour ne pas endommager le moule Si nécessaire, nettoyer le moule avec un chiffon légèrement humecté de nettoyant à moule (PMC) NE PAS TROP APPLIQUER DE "PMC"	Spatule en plastique	#23 01 MAR 2017 #21 - 1 MAR 2017	E : R :

USINAGE

150	PERÇAGE ET DÉCOUPE CNC 5 axes : Utiliser le gabarit d'usinage et le programme d'usinage à l'emplacement suivant : Z:\PROGRAMMES\Dart Aerospace\Dart Aerospace Rear Lockers\21-Dessins & Outillage\Outillage\usinage 5 axes	Annexe 1	#30 9 MAR 2017	E : R :
160	SABLAGE : - INSTALLER le Gabarit de finition et d'inspection GAB355 - SABLER la pièce jusqu'à arriver à la dimension du Gabarit GAB355 - ÉBAVURER les arêtes vives	GAB355 Annexe 1 MPS-300-93-31-020	#19 1 MAI 2017	E : R :
170	Point d'inspection (inspecteur qualité) : ☒ Plier les flanges (rebords) afin de s'assurer que le Gelcoat ne craque pas (voir Annexe 1 pour le schéma) ☒ Vérifier la conformité de la pièce (dimensions) selon le no. de dessin et selon le MPS-300-93-31-058	Annexe 1 MPS-300-93-31-058	 20170316	
180	SABLER légèrement l'extérieur de la pièce Papier 120 à 320 grains		#26 14 MAR 2017	E : R :
190	NETTOYER les surfaces extérieures		#3 MPS 28 MAR 2017	E : R :

Work Order ID 155131

Monday, January 09, 2017 11:27:52 AM

155131

Page 1

Item ID: D350-604-041

Accept

N900040100Setup Start ***NS1***

Revision ID: URF 16-567

Item Name: Rear Locker Extender

Stop ***NS2***

Start Date: 3/31/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 5/1/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date: JAN 12 2017 Tooling:

Date:

Run Start ***NR1***

QC:

Date: SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D2273	LU/R M
D350-604-041	C U/R

MAY 08 2017

100

Document Control

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile and create labels per PPP D350-604-041

CH009

CH0010

see attachment

CB

MAY 08 2017

110

PURCHASING

0.00

110

Purchasing

Memo

0.00

Purchasing

Issue P/O:

34972

Description: D350-604-041 Rear locker extender.

Manufacture as per dwg D2273

Supplier: FDC Composites Inc.

Certification of Conformity and process sheet required.

EXTREME CARE MUST BE TAKEN TO PROTECT THE SURFACES OF THE REAR LOCKER. THE SURFACES MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS.

MUST BE WELL PACKAGE, IF NOT IT WILL BE REFUSE

1 JAN 17 2017

3.

D350-604-041

REAR LOCKER EXTENDER